

ABSTRACT

An automated reactor-based system for treating water includes a reactor having an inlet to provide water at an inlet flow rate into the reactor, structure for adding at least one treatment chemical to the water and structure for dynamically adjusting an output flow rate of the water from the reactor. A controller is communicably connected to the structure for adjusting output flow rate to dynamically control the residence time of the water in the reactor to a predetermined residence time. The controller receives at least one input including the inlet flow rate and generates an output flow rate value to achieve the predetermined residence time. The output flow rate value is communicated to and implemented by the structure for dynamically adjusting output flow rate.